DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-012792
Date Inspected: 17-Mar-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 1000
OSM Departure Time: 1830
Location: Clackamas, OR

CWI Name:	M. Gregson, J. Salazar			**CWI Present:**	☑ Yes	☐ No		
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A	
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A	
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A	
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A	

Bridge No: 34-0006
Component: Hinge K Pipe Beams

Summary of Items Observed:

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

Hinge-K Pipe Beam Assembly 102A-2:
The QA Inspector witnessed WID #B62 (Marcus Belgarde), performing the submerged arc welding (SAW) on the a110-2 Base plate to ab106 HPS 485W stiffener. The QA Inspector noted that this weld joint was designated as a partial joint penetration (AWS D1.5 TC-P4-S), weld joint (WJ) #W2-23 and WID #B62 was performing the SAW in the flat (1G) position. The QA Inspector noted that the SAW fill passes were currently in-process and noted that the OIW approved welding procedure specification (WPS 4020), was being utilized. The QA Inspector noted that QC Inspector Jose´ Salazar, was present and QC Inspector Salazar explained that the in-process welding parameters/pre-heat temperatures, were intermittently verified. QC Inspector Salazar explained that the average welding parameters for the SAW fill passes were recorded at 620 amps/33.5 volts, with a pre-heat of approximately 350 degrees Fahrenheit (177 C) and travel speed of 25 inches per minute (i.p.m). The QA Inspector randomly verified pre-heat of approximately 350 degrees Fahrenheit (177 C) and welding parameters to be in compliance with the applicable WPS 4020. The QA Inspector noted that the SAW appeared to be in compliance with AWS D1.5 and the applicable WPS.

Hinge-K Pipe Beam Assembly 101A-1:
The QA Inspector witnessed WID #S53 (Jerry Shepherd), performing the backgouge on the previously completed

root pass, designated as weld joint (WJ) # WM4-1. The QA Inspector noted that this WJ was the 120A-1 Fuse to 102A-1 Forging and was designated as an AWS D1.5 B-U7-S Complete Joint Penetration (CJP), double U Groove, with a 20 degree included angle bevel prep. The QA Inspector noted that WID #S53 was performing the backgouge, utilizing the Carbon Arc process and that pre-heat was intermittently applied, with a stationary torch. The QA Inspector noted that QC Inspector Jose´ Salazar was present and QC Inspector Salazar explained that the pre-heat was verified, prior to starting the Carbon Arcing. The QA Inspector noted that the minimum temperature required is 150 degrees Fahrenheit, per AWS D1.5. QC Inspector Salazar explained that the Carbon Arcing will continue and then mechanical grinding will then be performed, to grind the root pass to sound, clean metal. QC Inspector Salazar explained that the backgouging will continue to depth of approximately 65 mm and he will then verify the depth and perform 100% Visual and Magnetic Particle Testing (VT/MT) on the backgouge.
QC Inspector Salazar explained that he had previously performed Visual Testing (VT) on the interior completed cover passes on this Weld Joint (WJ) # WM4-1. QC Inspector Salazar explained that he had measured areas of excessive reinforcement, utitilizing a bridge cam gauge, which exceeded 1/8” (3 mm). QC Inspector Salazar explained that he had marked up the areas for Visual repair and notified Production Lead Troy Smith. See attached pictures below.

Material, Equipment, and Labor Tracking (MELT)
QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project. The QA Inspector observed at Oregon Iron Works: 2 OIW production personnel and 2 QC Inspectors.
The QA Inspector noted the following personell were present at AG Machine Works. 1 AG Machinist and 1 AG Supervisor.

Summary of Conversations:
As noted above.
Comments
This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By: Vance,Sean Quality Assurance Inspector

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

Reviewed By: Adame,Joe QA Reviewer